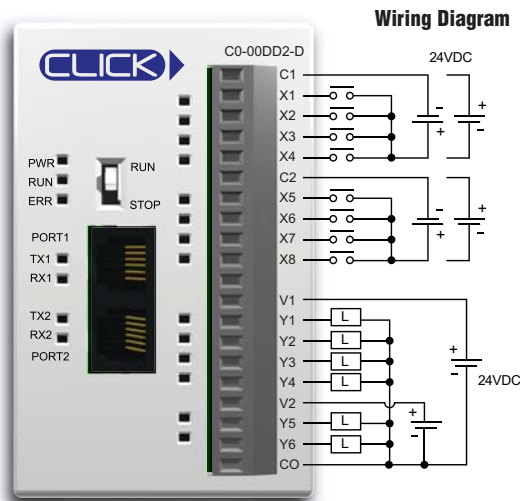


# Basic CPU Module Specifications

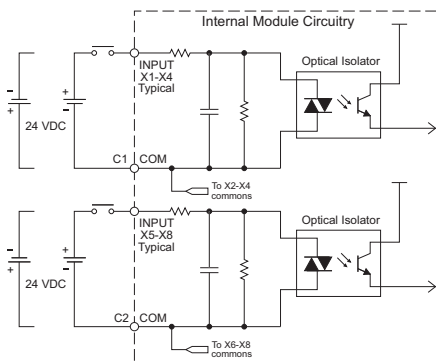
## C0-00DD2-D <--->

### 8 DC Inputs/6 Sourcing DC Outputs Micro PLC

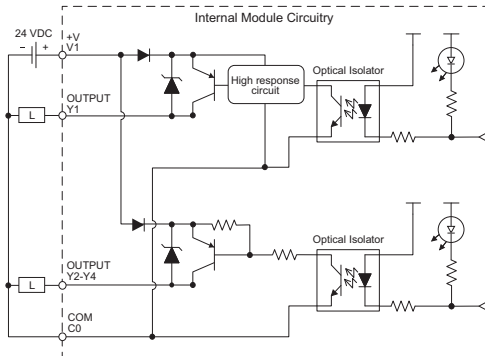
CLICK PLC CPU, 8 DC input/6 Sourcing DC output, 8K steps total program memory, Ladder Logic programming, built-in RS232C programming port and additional RS232C Modbus RTU/ASCII communications port (configurable up to 115200 baud). Inputs: 8 DC inputs, 24 VDC sink/source, 2 commons, isolated. Outputs: 6 DC outputs, 24 VDC sourcing, 0.1 A/pt, 2 commons, isolated. Removable terminal block included.



#### Equivalent Input Circuit



#### Equivalent Output Circuit

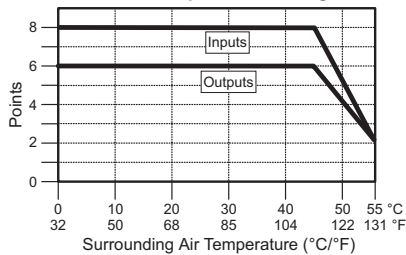


C0-00DD2-D Built-in I/O Specifications - Inputs	
<b>Inputs per Module</b>	8 (Sink/Source)
<b>Operating Voltage Range</b>	24 VDC
<b>Input Voltage Range</b>	21.6 - 26.4 VDC
<b>Input Current</b>	X1-2: Typ 5 mA @ 24 VDC X3-8: Typ 4 mA @ 24 VDC
<b>Maximum Input Current</b>	X1-2: 6.0 mA @ 26.4 VDC X3-8: 5.0 mA @ 26.4 VDC
<b>Input Impedance</b>	X1-2: 4.7 kΩ @ 24 VDC X3-8: 6.8 kΩ @ 24 VDC
<b>ON Voltage Level</b>	X1-2: > 19 VDC X3-8: > 19 VDC
<b>OFF Voltage Level</b>	X1-2: < 4 VDC X3-8: < 7 VDC
<b>Minimum ON Current</b>	X1-2: 4.5 mA X3-8: 3.5 mA
<b>Maximum OFF Current</b>	X1-2: 0.1 mA X3-8: 0.5 mA
<b>OFF to ON Response</b>	X1-2: Typ 5 μs Max 20 μs X3-8: Typ 2 ms Max 10 ms
<b>ON to OFF Response</b>	X1-2: Typ 5 μs Max 20 μs X3-8: Typ 3 ms Max 10 ms
<b>Status Indicators</b>	Logic Side (8 points, green LED)
<b>Commons</b>	2 (4 points/common) Isolated

C0-00DD2-D Built-in I/O Specifications - Outputs	
<b>Outputs per Module</b>	6 (Source)
<b>Operating Voltage Range</b>	24 VDC
<b>Output Voltage Range</b>	19.2- 30 VDC
<b>Maximum Output Current</b>	0.1 A/point, 0.6 A/common
<b>Minimum Output Current</b>	0.2 mA
<b>Maximum Leakage Current</b>	0.1 mA @ 30 VDC
<b>On Voltage Drop</b>	Y1: 1.0 VDC @ 0.1 A Y2-6: 0.5 VDC @ 0.1 A
<b>Maximum Inrush Current</b>	150 mA for 10 ms
<b>OFF to ON Response</b>	Y1: typ 5 μs; max 20 μs Y2-6: < 0.5 ms
<b>ON to OFF Response</b>	Y1: typ 5 μs; max 20 μs Y2-6: < 0.5 ms
<b>Status Indicators</b>	Logic Side (6 points, red LED)
<b>Commons</b>	2 (4 points/com & 2 points/com) Isolated

General Specifications	
<b>Current Consumption at 24VDC</b>	120 mA
<b>Terminal Block Replacement Part No.</b>	C0-16TB
<b>Weight</b>	5.0 oz (140 g)

C0-00DD2-D Temperature Derating Chart



#### ZipLink Pre-Wired PLC Connection Cables and Modules



ZL-RTB20 20-pin feed-through connector module

20-pin connector cable  
ZL-C0-CBL20 (0.5 m length)  
ZL-C0-CBL20-1 (1.0 m length)  
ZL-C0-CBL20-2 (2.0 m length)

# CLICK Specifications

## General Specifications For All CLICK PLC Products

These general specifications apply to all CLICK CPUs, optional I/O modules, and optional power supply products. Please refer to the appropriate I/O temperature derating charts under both the CPU and I/O module specifications to determine best operating conditions based on the ambient temperature of your particular application.

General Specifications	
<b>Power Input Voltage Range</b>	20-28 VDC
<b>Maximum Power Consumption</b>	5 W (No 5 V use from communication port)
<b>Maximum Inrush Current</b>	30 A (less than 1ms)
<b>Acceptable External Power Drop</b>	Max 10 ms
<b>Operating Temperature</b>	32°F to 131°F (0°C to 55°C), IEC 60068-2-14 (Test Nb, Thermal Shock)
<b>Storage Temperature</b>	-4°F to 158°F (-20°C to 70°C) IEC 60068-2-1 (Test Ab, Cold) IEC 60068-2-2 (Test Bb, Dry Heat) IEC 60068-2-14 (Test Na, Thermal Shock)
<b>Ambient Humidity</b>	30% to 95% relative humidity (non-condensing)
<b>Environmental Air</b>	No corrosive gases. Environmental pollution level is 2 (UL840)
<b>Vibration</b>	MIL STD 810C, Method 514.2, EC60068-2-6 JIS C60068-2-6 (Sine wave vibration test)
<b>Shock</b>	MIL STD 810C, Method 516.2, IEC60068-2-27, JIS C60068-2-27
<b>Noise Immunity</b>	Comply with NEMA ICS3-304, Impulse noise 1µs, 1000V EN61000-4-2 (ESD), EN61000-4-3 (RFI), EN61000-4-4 (FTB) EN61000-4-5 (Surge), EN61000-4-6 (Conducted) EN61000-4-8 (Power frequency magnetic field immunity) RFI: No interference measured at 150, 450 MHz (5w/15cm)
<b>Emissions</b>	EN55011:1998 Class A
<b>Agency Approvals</b>	UL508 (File No. E157382, E316037); CE (EN61131-2)
<b>Other</b>	RoHS instruction conformity

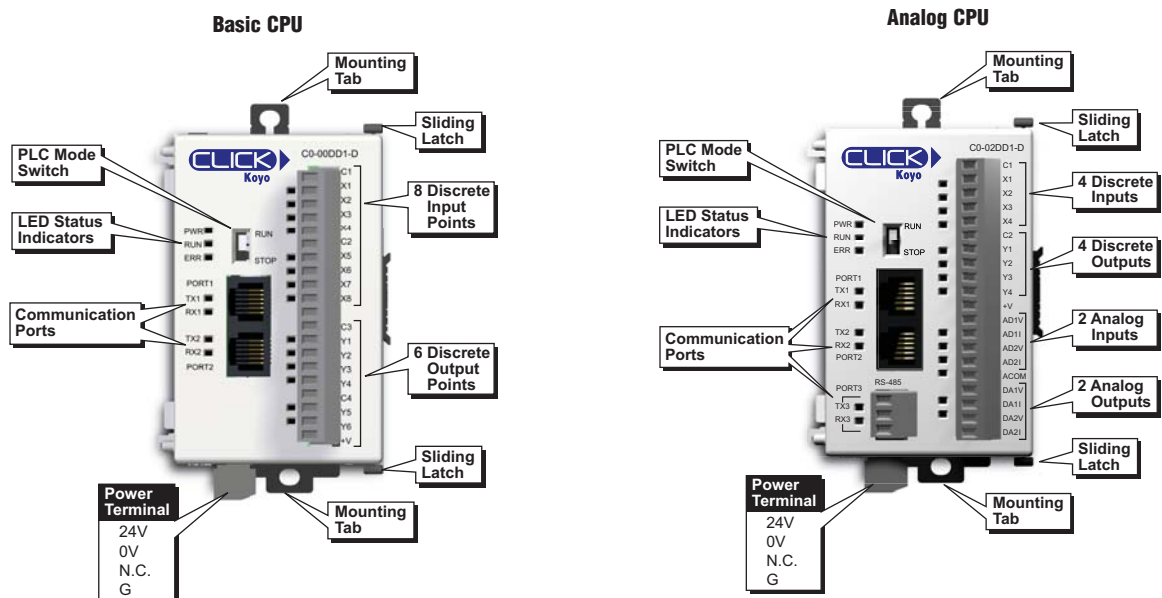
## CPU Module Specifications

These specifications apply to all the CPU modules.

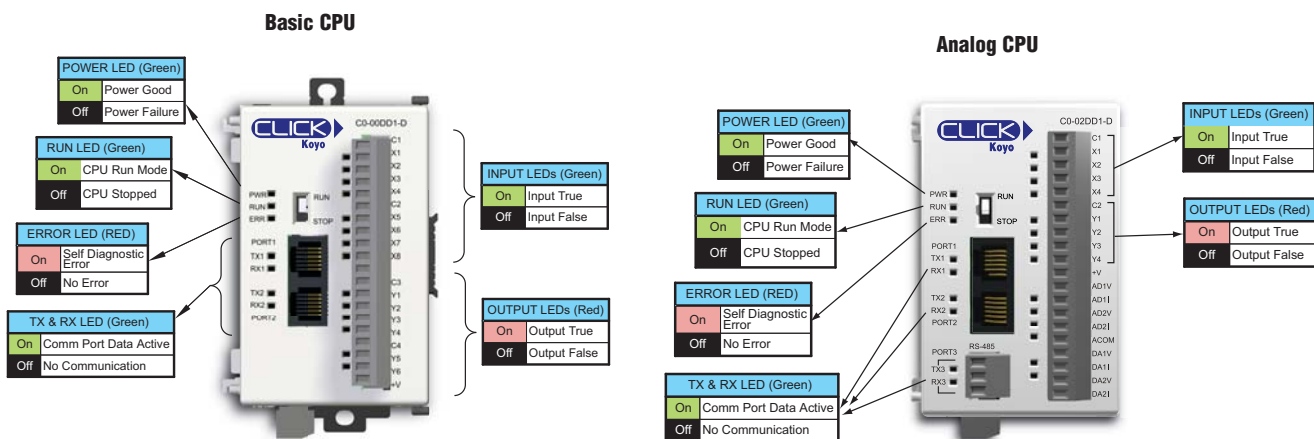
CPU Module Specifications		
	Basic CPU	Analog CPU
<b>Control Method</b>	Stored Program/Cyclic execution method	
<b>I/O Numbering System</b>	Fixed in Decimal	Fixed in Decimal
<b>Ladder Memory (steps)</b>	8000	8000
<b>Total Data Memory (words)</b>	8000	8000
<b>Contact Execution (boolean)</b>	< 0.6 us	< 0.6 us
<b>Typical Scan (1k boolean)</b>	1-2 ms	1-2 ms
<b>RLL Ladder Style Programming</b>	Yes	Yes
<b>Run Time Edits</b>	No	No
<b>Scan</b>	Variable / fixed	Variable / fixed
<b>CLICK Programming Software for Windows</b>	Yes	Yes
<b>Built-in Communication Ports</b>	Yes (two RS-232 ports)	Yes (2 RS-232 and 1 RS-485 ports)
<b>FLASH Memory</b>	Standard on CPU	Standard on CPU
<b>Built-in Discrete I/O points</b>	8 inputs, 6 outputs	4 inputs, 4 outputs
<b>Built-in Analog I/O Channels</b>	No	2 inputs, 2 outputs
<b>Number of Instructions Available</b>	21	21
<b>Control Relays</b>	2000	2000
<b>System Control Relays</b>	1000	1000
<b>Timers</b>	500	500
<b>Counters</b>	250	250
<b>Interrupt</b>	Yes (external: 8 / timed: 4)	Yes (external: 4 / timed: 4)
<b>Subroutines</b>	Yes	Yes
<b>For/Next Loops</b>	Yes	Yes
<b>Math (Integer and Hex)</b>	Yes	Yes
<b>Drum Sequencer Instruction</b>	Yes	Yes
<b>Internal Diagnostics</b>	Yes	Yes
<b>Password Security</b>	Yes	Yes
<b>System Error Log</b>	Yes	Yes
<b>User Error Log</b>	No	No
<b>Memory Backup</b>	Super Capacitor	Super Capacitor + Battery
<b>Battery Backup</b>	No	Yes (battery part no. D2-BAT-1)
<b>Calendar/Clock</b>	No	Yes
<b>I/O Terminal Block Replacement</b>	ADC p/n C0-16TB	ADC p/n C0-16TB
<b>Communication Port &amp; Terminal Block Replacement</b>	N/A	ADC p/n C0-03TB
<b>24 VDC Power Terminal Block Replacement</b>	ADC p/n C0-4TB	ADC p/n C0-4TB

# CLICK Specifications

## CPU Features

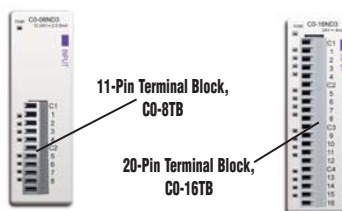


## CPU LED Status Indicators



## I/O Terminal Block Specifications for CPUs and I/O Modules

11-pin Terminal Block Specifications	
<b>Connector Type</b>	Pluggable Terminal Block
<b>Number of Pins</b>	11 pt
<b>Pitch</b>	3.50 mm
<b>Wire Range</b>	28-16 AWG
<b>Wire Strip Length</b>	7 mm
<b>Screw Size</b>	M2.0
<b>Screw Torque</b>	2.0 to 2.2 lb-inch
<b>ADC Part Number</b>	C0-8TB



20-pin Terminal Block Specifications	
<b>Connector Type</b>	Pluggable Terminal Block
<b>Number of Pins</b>	20 pt
<b>Pitch</b>	3.50 mm
<b>Wire Range</b>	28-16 AWG
<b>Wire Strip Length</b>	7 mm
<b>Screw Size</b>	M2.0
<b>Screw Torque</b>	2.0 to 2.2 lb-inch
<b>ADC Part Number</b>	C0-16TB

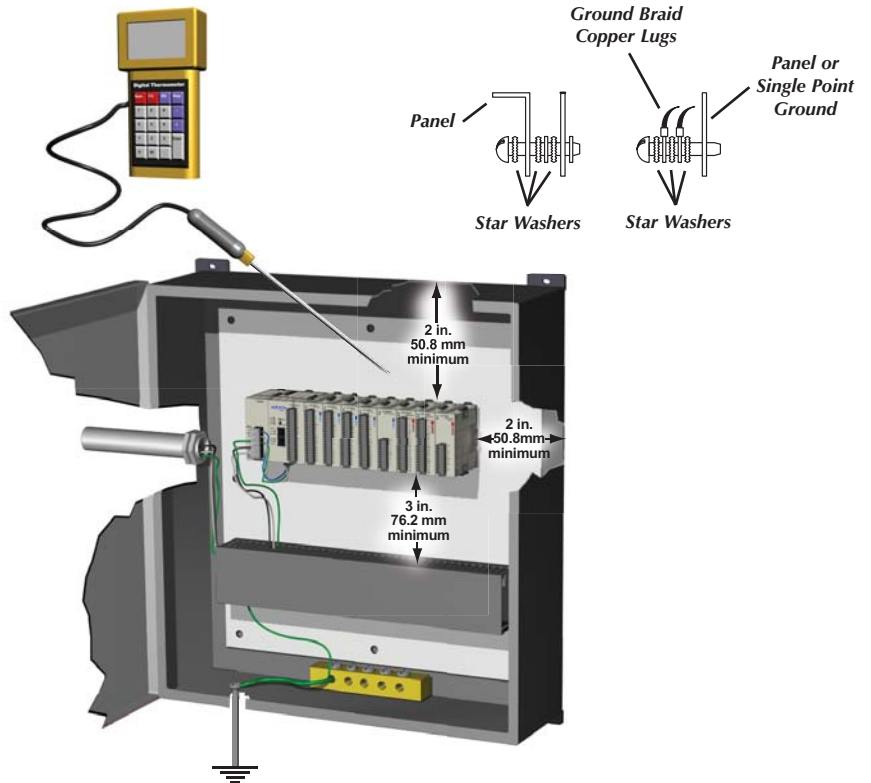
# Product Dimensions and Installation

It is important to understand the installation requirements for your CLICK system. Your knowledge of these requirements will help ensure that your system operates within its environmental and electrical limits.

## Plan for Safety

This catalog should never be used as a replacement for the user manual.

You can purchase, download free, or view online the user manuals for these products. Manual C0-USER-M is the user manual for the CLICK PLC. This user manual contains important safety information that must be followed. The system installation should comply with all appropriate electrical codes and standards.

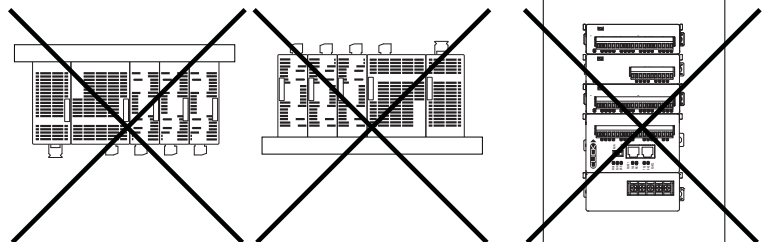
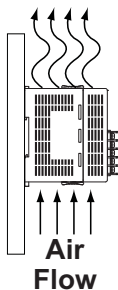


**NOTE:** THERE IS A MINIMUM CLEARANCE REQUIREMENT OF 2 INCHES (51 MM) BETWEEN THE CLICK PLC AND THE PANEL DOOR OR ANY DEVICES MOUNTED IN THE PANEL DOOR. THE SAME CLEARANCE IS REQUIRED BETWEEN THE PLC AND ANY SIDE OF THE ENCLOSURE. A MINIMUM CLEARANCE OF 3 INCHES (76 MM) IS REQUIRED BETWEEN THE PLC AND A WIREWAY OR ANY HEAT PRODUCING DEVICE.



## Mounting Orientation

CLICK PLCs must be mounted properly to ensure ample airflow for cooling purposes. It is important to follow the unit orientation requirements and to verify that the PLC's dimensions are compatible with your application. Notice particularly the grounding requirements and the recommended cabinet clearances.

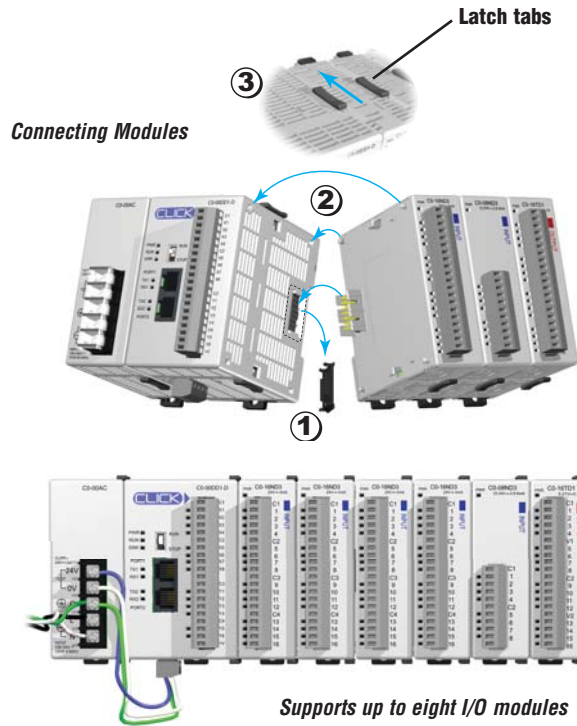


# Product Dimensions and Installation

## Connecting the Modules Together

CLICK CPUs, I/O modules and power supplies connect together using the extension ports that are located on the side panels of the modules (no PLC backplane/base required).

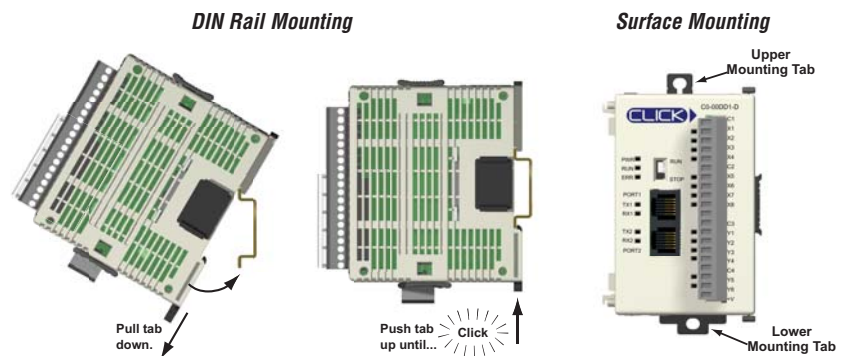
1. Remove extension port covers and slide the latch tabs forward.
2. Align the module pins and connection plug, and press the I/O module onto the right side of the CPU.
3. Slide the latch tabs backward to lock the modules together.



## Mounting

The CLICK PLC system, which includes the CLICK power supplies, CPU modules, and I/O modules, can be mounted in one of two ways.

1. DIN rail mounted
2. Surface mounted using the built-in upper and lower mounting tabs.



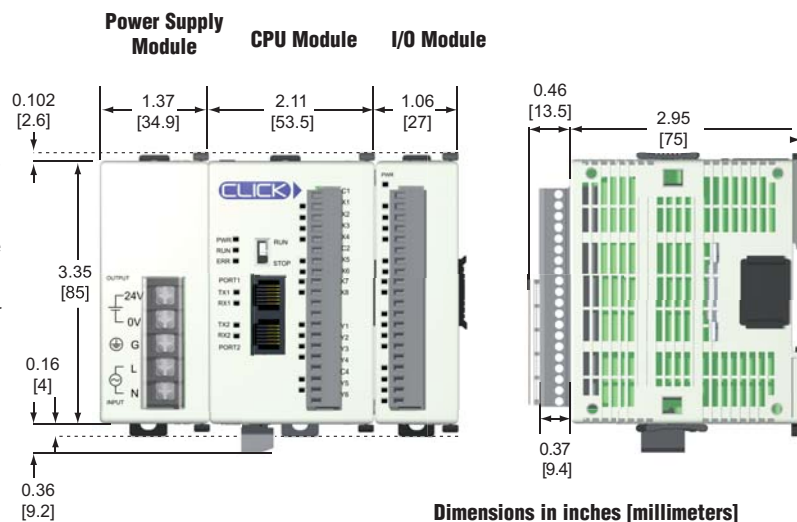
## Unit Dimensions

These diagrams show the outside dimensions of the CLICK power supply, CPU, and I/O modules. The CLICK PLC system is designed to be mounted on standard 35mm DIN rail, or it can be surface mounted.

Allow proper spacing from other components within an enclosure.

### Maximum system:

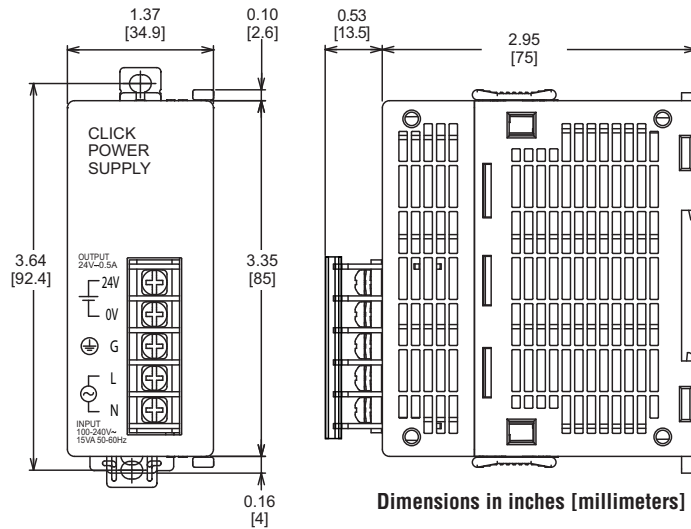
Power Supply + CPU + 8 I/O modules.



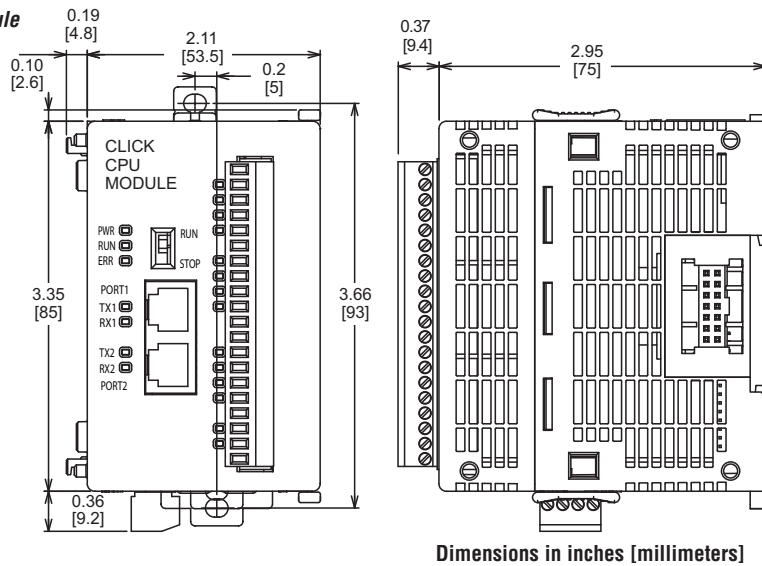
# Product Dimensions and Installation

## Unit Dimensions

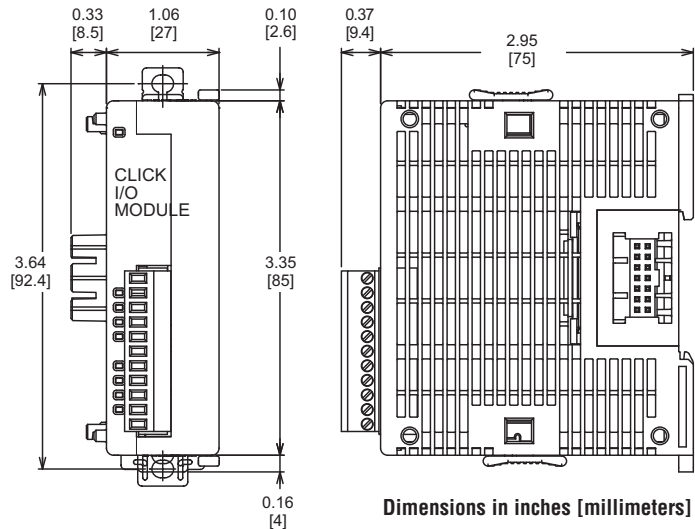
**Power Supply**



**CPU Module**



**I/O Module**



# Networking the CLICK PLC

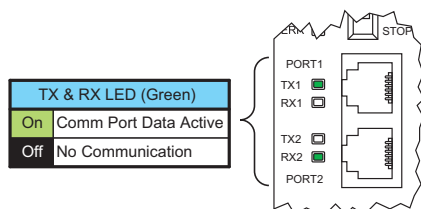
## Built-in Communications Ports

All CPUs have two built-in RS-232 communications ports. Analog CPUs also have one built-in RS-485 communications port. One RS-232 port supports the Modbus RTU protocol only and can be used as the programming port. The other ports support either Modbus RTU or ASCII protocol. Both RS-232 ports supply 5 VDC, so you can connect our C-more Micro HMI panel without an additional power supply.

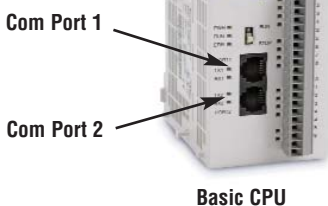
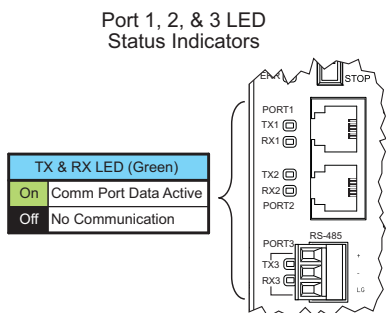
## LED Status Indicators

There are LED indicators located to the left of each communication port to indicate when the port is transmitting or receiving.

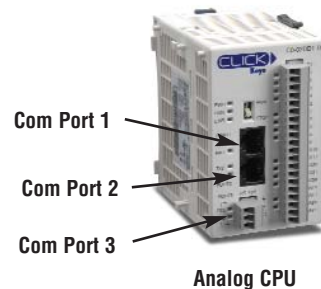
### Basic CPUs Port 1 & 2 LED Status Indicators



### Analog CPUs Port 1, 2, & 3 LED Status Indicators



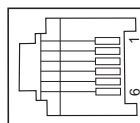
Basic CPU



Analog CPU

Com Port 1 Specifications	
Use:	Programming Port
Physical:	6 pin, RJ12, RS-232
Communication speed (baud):	38400 (fixed)
Parity:	Odd
Station Address:	1
Data length:	8 bits
Stop bit:	1
Protocol:	Modbus RTU (slave only)

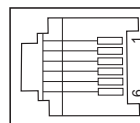
Port 1  
6 pin RJ12 Phone Type Jack



Port 1 Pin Descriptions		
1	0V	Power (-) connection (GND)
2	5V	Power (+) connection
3	RXD	Receive data (RS-232)
4	TXD	Transmit data (RS-232)
5	NC	No connection
6	0V	Power (-) connection (GND)

Com Port 2 Specifications	
Use:	Serial Communication
Physical:	6 pin, RJ12, RS-232
Communication speed (baud):	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200
Parity:	odd, even, none
Station Address:	1 to 247
Data length:	8 bits (Modbus RTU) or 7, 8 bits (ASCII)
Stop bit:	1,2
Protocol:	Modbus RTU (master/slave) or ASCII in/out

Port 2  
6 pin RJ12 Phone Type Jack

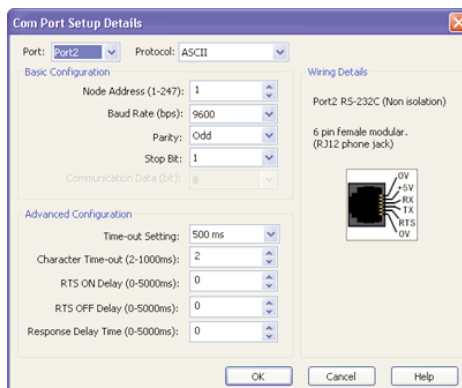


Port 2 Pin Descriptions		
1	0V	Power (-) connection (GND)
2	5V	Power (+) connection
3	RXD	Receive data (RS-232)
4	TXD	Transmit data (RS-232)
5	RTS	Request to send
6	0V	Power (-) connection (GND)

Com Port 3 Specifications	
Use:	Serial Communication
Physical:	3 pin, RS-485
Communication speed (baud):	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200
Parity:	odd, even, none
Station Address:	1 to 247
Data length:	8 bits (Modbus RTU) or 7, 8 bits (ASCII)
Stop bit:	1,2
Protocol:	Modbus RTU (master/slave) or ASCII in/out

Port 3  
RS-485  
+  
-  
LG

Port 3 Pin Descriptions		
1	+ (plus)	Signal A (RS-485)
2	- (minus)	Signal B (RS-485)
3	LG	Logic Ground(0 V)



## Port Setup

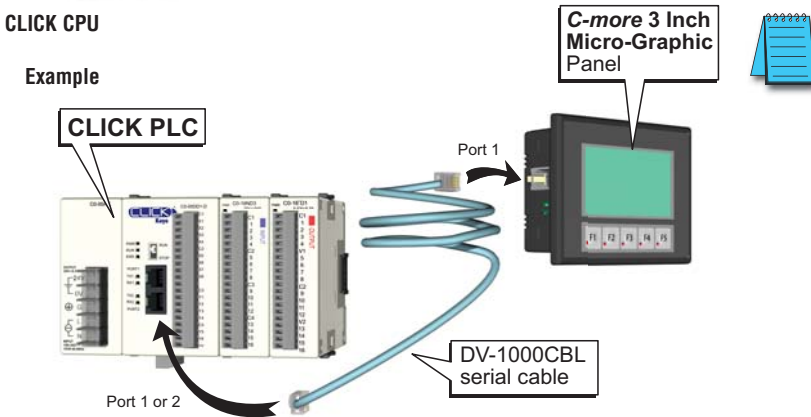
Use CLICK programming software to easily configure the communication ports.

# Networking the CLICK PLC

## Typical Serial Communication Applications

The diagrams on these two pages illustrate the typical uses for the CLICK CPU's communication ports.

### Port 1 (RS-232) – Modbus RTU Slave Mode Only



*NOTE: A C-more Micro-Graphic panel can be connected to CLICK's Port 1 and/or Port 2. Either port can provide 5 VDC to power the panel, but not at the same time. If a C-more Micro-Graphic panel is connected to both ports, then at least one of the panels must be powered by a C-more DC power adapter, EA-MG-P1 or EA-MG-SP1, or another 24 VDC power source.*

### Do not use the Following DirectLOGIC Devices with CLICK's Port 1 or 2:



**WARNING:** The following DirectLOGIC PLC devices cannot be used with a CLICK CPU's Port 1 or Port 2:  
 Handheld Programmer for DL05, DL06, DL105, DL205 & D3-350 CPUs, p/n D2-HPP  
 Handheld Programmer for DL405 CPUs, p/n D4-HPP-1  
 Timer/Counter Access for DL05, DL06, DL105, DL205, DL405 & D3-350 CPUs, p/n DV-1000



D2-HPP



D4-HPP-1



DV-1000

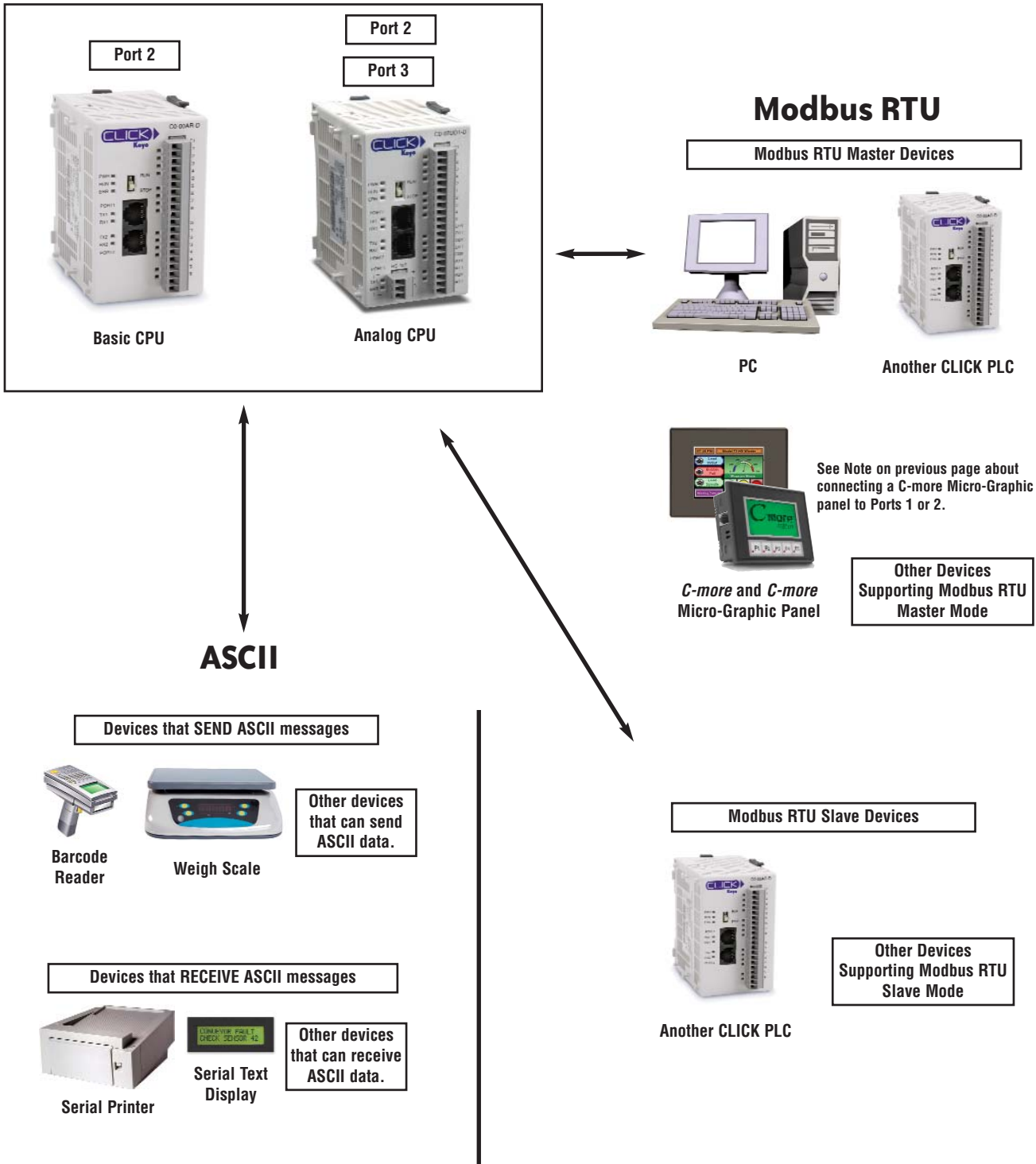


# Networking the CLICK PLC

**Port 2 (RS-232) – Modbus RTU or ASCII**

**Port 3 (RS-485; Analog CPUs Only) – Modbus RTU or ASCII**

All CPUs have RS-232 port 2, but only analog CPUs have RS-485 port 3. Ports 2 and 3 allow networking to similar devices.



# Power Supplies

## Power Supplies

The CLICK PLC family offers two 24 VDC power supplies. They are identical except for the output current.

It is not mandatory to use one of these CLICK power supplies for the CLICK PLC system. You can use any other 24 VDC power supply that Automationdirect.com offers.

### CO-00AC Power Supply

Limited auxiliary AC power supply allows you to power the 24 VDC CLICK C0 series CPUs with 100-240 VAC supply power. The 0.5A DC power supply is capable of controlling the CPU plus a limited configuration based on the power budget of each I/O module. The CO-00AC is a low-cost solution for applications requiring only minimal I/O and power consumption. This power supply will not support a fully-populated CLICK PLC system with all possible I/O module combinations.

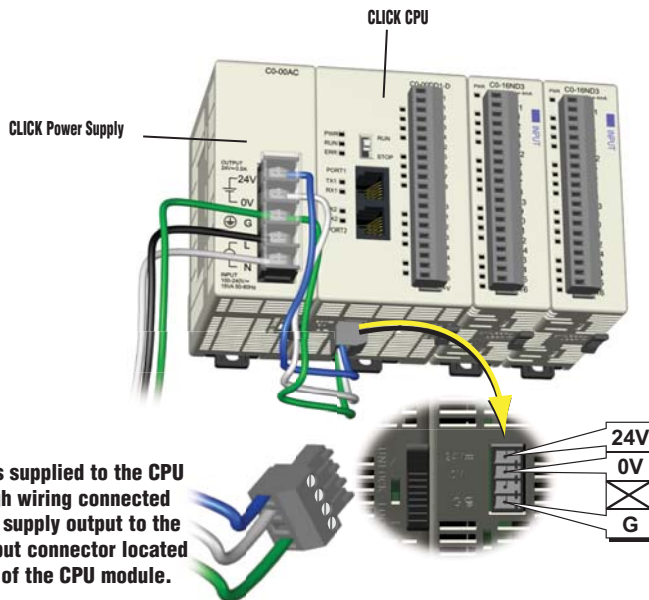
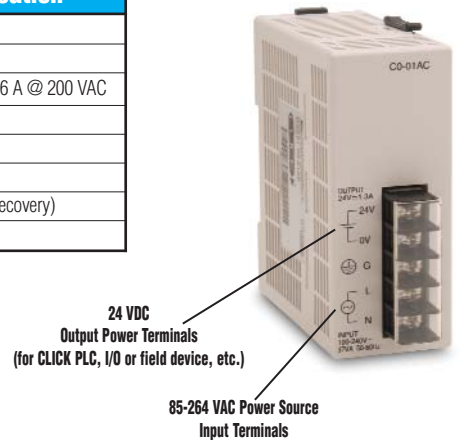
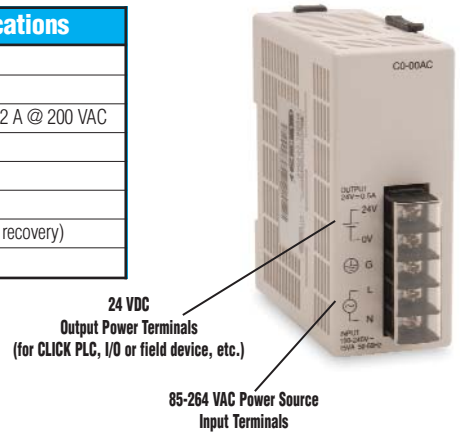
### CO-01AC Power Supply

Expanded auxiliary AC power supply allows you to power the 24 VDC CLICK C0 series CPUs with 100-240 VAC supply power. The 1.3A DC power supply is capable of supporting a fully-populated CLICK PLC system with all possible I/O module combinations, with no concerns for exceeding the power budget.

CLICK 24 VDC Power Supply Ratings	
Part Number	Output Current
CO-00AC	0.5 A
CO-01AC	1.3 A

CO-00AC Power Supply Specifications	
<b>Input Voltage Range</b>	85-264 VAC
<b>Input Frequency</b>	47-63 Hz.
<b>Input Current (typical)</b>	0.3 A @ 100 VAC, 0.2 A @ 200 VAC
<b>Inrush Current</b>	30 A
<b>Output Voltage Range</b>	23-25 VDC
<b>Output Current</b>	0.5 A
<b>Over Current Protection</b>	@ 0.65 A (automatic recovery)
<b>Weight</b>	5.3 oz (150g)

CO-01AC Power Supply Specification	
<b>Input Voltage Range</b>	85-264 VAC
<b>Input Frequency</b>	47-63 Hz.
<b>Input Current (typical)</b>	0.9 A @ 100 VAC, 0.6 A @ 200 VAC
<b>Inrush Current</b>	30 A
<b>Output Voltage Range</b>	23-25 VDC
<b>Output Current</b>	1.3 A
<b>Over Current Protection</b>	@ 1.6 A (automatic recovery)
<b>Weight</b>	6.0 oz (170g)



# Power Budgeting

## Power Budgeting

There are two areas to be considered when determining the power required to operate a CLICK PLC system. The first area is the power required by the CLICK CPU, along with the internal logic side power that the CPU provides to its own I/O and any connected I/O modules that are powered through the CPU's expansion port; plus any device, such as a C-more Micro-Graphic panel, that is powered through one of the CPU's communication ports.

The second area is the power required by all externally connected I/O devices. This should be viewed as the field side power required. The field side power is dependent on the voltage used for a particular input or output device as it relates to the wired I/O point, and the calculated load rating of the connected device.

It is strongly recommended that the power source for the logic side be separate from the power source for the field side to help eliminate possible electrical noise.

Power budgeting requires the calculation of the total current that the 24 VDC power source needs to provide to CLICK's logic side, and also a separate calculation of the total current required for all devices operating from the field side of the PLC system.

See the Power Budgeting Example shown to the right. The table shows current requirements for a CLICK CPU, two I/O modules, and a C-more Micro. Use the total amperage values to select a proper sized power supply.

### Power Budgeting Using the CLICK Programming Software

The following example shows the logic side current consumption as calculated in the CLICK Programming software. Based on the amperage rating of the power supply selected in the first column, your power budget is calculated by subtracting each consecutive module's power consumption from the total available power budget. If you exceed the maximum allowable power consumption the power budget row is highlighted in red.

**Power budget row turns red if maximum allowable power consumption is exceeded for the power supply selected.**



CLICK 24 VDC Power Supply  
CO-00AC or CO-01AC



Other 24 VDC Power Supply  
Example: PSP24-60S

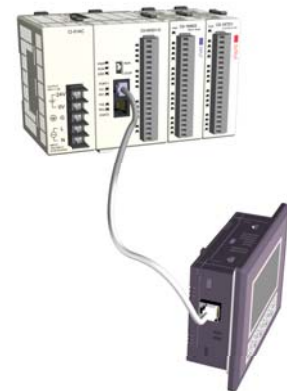
Current Consumption (mA)		
Part Number	Power Budget 24 VDC (logic side)	External 24 VDC (field side)
<b>Basic CPU Modules</b>		
CO-00DD1-D	120	60
CO-00DD2-D	120	0
CO-00DR-D	120	0
CO-00AR-D	120	0
<b>Analog CPU Modules</b>		
CO-02DD1-D	120	60
CO-02DD2-D	120	0
CO-02DR-D	120	0
<b>Input Modules</b>		
CO-08ND3	30	0
CO-08ND3-1	30	0
CO-16ND3	40	0
CO-08NA	30	0

Current Consumption (mA)		
Part Number	Power Budget 24 VDC (logic side)	External 24 VDC (field side)
<b>Output Modules</b>		
CO-08TD1	50	15
CO-08TD2	50	0
CO-16TD1	80	100
CO-16TD2	80	0
CO-08TA	80	0
CO-04TRS	100	0
CO-08TR	100	0
<b>C-more Micro-Graphic Panel</b>		
All p/n	90	0

### Power Budgeting Example

Current Consumption (mA) Example		
Part Number	Power Budget 24 VDC (logic side)	External 24 VDC (field side)
CO-00DD1-D	120	60
CO-16ND3	40	0
CO-16TD1	80	100
C-more Micro	90	0
<b>Total:</b>	<b>330</b>	<b>160 *</b>

\* Plus calculated load of connected I/O devices.



The screenshot shows the 'System Configuration Setup' window. At the top, there's a rack of modules including P/S, CPU, and various I/O modules. Below the rack, a table displays the power budgeting data for each module. The 'PwrBudget(mA)' row is highlighted in red, indicating that the total power consumption has exceeded the available power budget.

Name	P/S	CPU	I/O 1	I/O 2	I/O 3	I/O 4	I/O 5	I/O 6	I/O 7	I/O 8
Module Type	CO-00AC	CO-00DR-D	CO-16ND3	CO-08ND3	CO-08NA	CO-16TD1	CO-04TRS	CO-08TR		
Input		X001-X008	X101-X116	X201-X208	X301-X308					
Output		Y001-Y006				Y401-Y416	Y501-Y504	Y601-Y608		
PwrBudget(mA)	520	120	40	30	30	80	100	120		